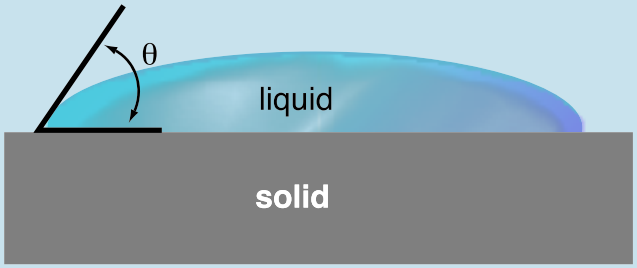
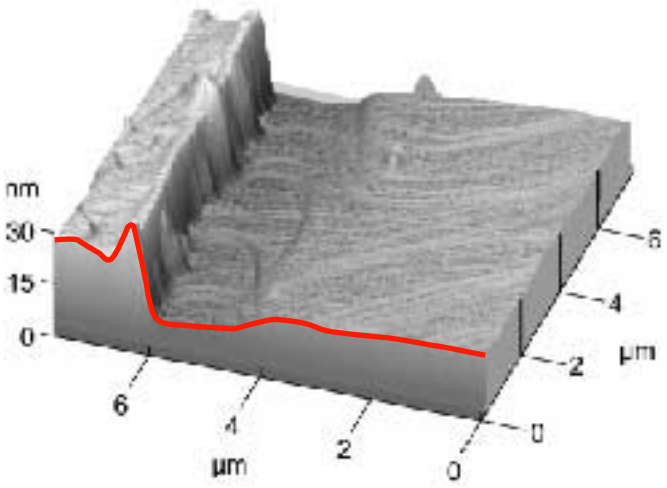
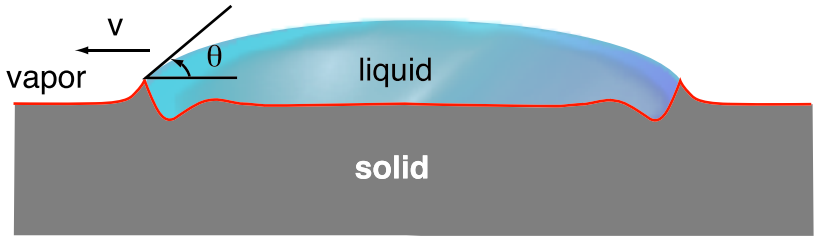
Behavior of Liquid Metals on Ceramic Surfaces Explained

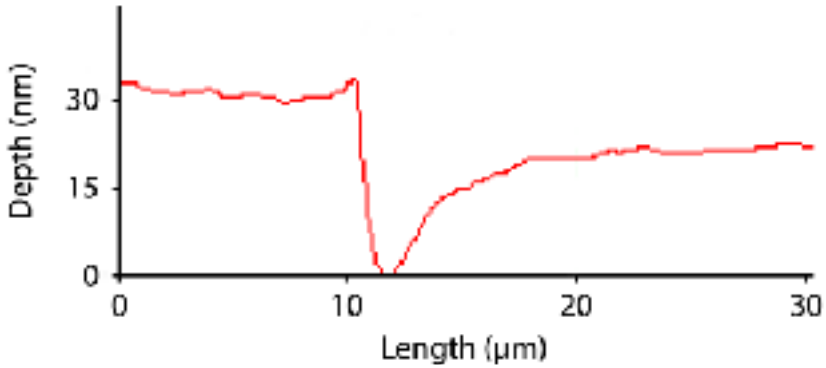


Wetting and contact angle. *When a liquid wets a surface, a droplet is formed. The angle between the edge of the droplet and the solid surface is called the contact angle θ. The more the droplet stands up or "beads" on the solid surface, the larger the contact angle.*



Observed shape of ridge (AFM image above, artist's image left, graph below), matches that predicted by new wetting model that includes effects due to diffusion of the solid substrate under the molten drop. The model also explains why the contact angle varies for advancing and receding droplet fronts (hysteresis) in apparent violation of the classic Young-Dupre equation.





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